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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,769	04/27/2001	Toshiya Hagihara	1422-0472P	2832

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EXAMINER

UMEZ ERONINI, LYNETTE T

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,769

Applicant(s)

HAGIHARA ET AL.

Examiner

Lynette T. Umez-Eronini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

REQUEST FOR CONTINUED EXAMINATION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/18/2005 has been entered.

Declaration

2. The Declaration under 37 CFR 1.132 filed 3/18/2005 is insufficient to overcome the rejection of claims 13, 14, and 16-26 based upon the 102(e) rejection over Taira et al. (US 6,569,216) because the evidence of unexpected results cannot be used to overcome a 102 rejection.

With respect to the 103 rejection of claim 15 over Tiara (US '261) in view of Streinz et al. (US 6,015,506), the Declaration under 37 CFR 1.132 filed 3/18/2005 fails to show unexpected result with respect to the process of claim 14, wherein the alumina sol in Compounds (C) that has a specific surface area of from 30 to 300 m²/g and average particle size of 0.01 to 5 µm, because:

Applicants failed to show an unexpected result is obtained from a comparison of polishing compositions, which includes the same generic components, i.e. water, roll-off reducing agent and θ -alumina intermediate abrasive (i) in the presence of an α -alumina abrasive and (ii) in the absence of an α -alumina abrasive.

Results of a polished surface obtained by using a polishing composition including:

(i) water, an α -alumina abrasive, a roll-off reducing agent, and θ -alumina intermediate abrasive; and

a polishing composition, including:

(ii) water, no α -alumina abrasive, roll-off reducing agent, and fumed δ -alumina intermediate abrasive, as shown respectively in Experimental Example No. 1-10 and 11 (see Tables A and B on pages 4-5 of Declaration filed 3/18/2005), shows a comparison between different intermediate abrasives, wherein θ -alumina is used in the former and δ -alumina is used in the latter case.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language:

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4. Claims 13, 14, and 16-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Taira et al. (US 6,569,216 B1).

Taira teaches a polishing process and a polishing composition comprising water, an abrasive, an intermediate, and a chelating compound (same as applicants' roll-off reducing agent), wherein the content of the intermediate alumina is from 1 to 50 parts by weight, based on 100 part by weight of the abrasive (column 1, lines 10-11; column 2, lines 27-32; and Abstract). The chelating compound includes hydroxycarboxylic acids (same as applicants' carboxylic acids having 2 to 20 carbon atoms having either hydroxyl group or groups) such as tartaric acid and malic acid and aminocarboxylic acid (same as applicants' roll-off agent comprising polycarboxylic acids having 4 or more carbon atoms and having hydroxyl group and aminopolycarboxylic acids) such as ethylenediaminetetraacetic acid (column 2, lines 43-49). Taira also teaches the use of one or more kinds of abrasives grains, especially alumina particles and the alumina particles include α -alumina particles and intermediate alumina particles (column 6, lines 34-51). The aforementioned reads on,

A process for producing a substrate comprising a step of polishing a substrate to be polished with a polishing composition comprising:

water (Abstract);

an abrasive (Abstract);

a roll-off reducing agent comprising one or more compound selected from the group consisting of carboxylic acids having 2 to 20 carbons atoms having either hydroxyl group or groups or SH group or groups, monocarboxylic acids having 1 to 20;

carbon atoms and dicarboxylic acids having 2 to 3 carbon atoms, and salts thereof (column 2, lines 43-49); and

an intermediate alumina; and

falls within the range wherein said abrasive is α -alumina and the amount of the intermediate alumina is from 1 to 100 parts by weight based on 100 parts by weight of α -alumina (column 1, lines 10-11; column 2, lines 27-32; and Abstract), **in claim 13.**

The said aforementioned and the limitations in re claims 13 further read on,

A process for producing a substrate comprising a step of polishing a substrate to be polished with a polishing composition comprising:

(A) one or more compounds selected from the group consisting of carboxylic acids having 2 to 20 carbon atoms having either hydroxyl group or groups or SH group or groups, monocarboxylic acid having 1 to 20 carbon atoms, dicarboxylic acids having 2 to 3 carbon atoms, and salts thereof;

(B) one or more compounds selected from the group consisting of polycarboxylic acids having 4 or more carbon atoms and having either OH or group or groups or SH group or groups, monocarboxylic acids having 1 to 20 carbon atoms, and dicarboxylic acids having 2 to 3 carbon atoms, and salts thereof;

(C) one or more compounds selected from the group consisting of an intermediate alumina and an alumina sol;

an abrasive; and water, wherein said abrasive is α -alumina and the amount of the intermediate alumina is from 1 to 100 parts by weight based on 100 parts by weight of α -alumina, **in claims 14, 17-19 and 21-24;** and

falls within the range of the amount of the intermediate alumina is from 2 to 70 parts by weight based on 100 parts by weight of α -alumina, **in claim 25** and 4 to 40 parts by weight based on 100 parts by weight of α -alumina, **in claim 26**.

Taira teaches, "A polishing composition comprising water, an abrasive, an intermediate alumina, and a chelating compound (same as applicants' carboxylic acids in Compounds (A), (B), and (C) or a salt thereof" (Abstract) and " . . . the following intermediate aluminas are preferable, from the viewpoints of the effects of increase in the polishing rate and reduction in the surface roughness. Their crystal forms are preferably γ -alumina, δ -alumina, θ -alumina, mixtures thereof, and the like, more preferably γ -alumina, δ -alumina, mixtures thereof, especially preferably γ -alumina. In addition, their specific surface area is preferably from 30 to 300 m²/g, more preferably from 50 to 200 m²/g. Their average particle size is preferably from 0.01 to 5 μ m, more preferably from 0.05 to 5 μ m, still more preferably from 0.1 to 3 μ m, especially preferably from 0.1 to 1.5 μ m. . . . In addition, the content of the alkali metal and the alkaline earth metal in the intermediate alumina particles is preferably 0.1% by weight or less, more preferably 0.05% by weight or less, especially preferably 0.01% by weight or less . . . " (column 8, line 34 - column 9, line 20). The above reads on,

wherein the intermediate alumina and the alumina sol in Compounds (C) have a specific surface area of from 30 to 300 m²/g and an average particle size of 0.01 to 5 μ m, **in claim 15**; and

wherein said intermediate alumina is selected from the group consisting of γ -alumina, δ -alumina, θ -alumina, η -alumina, κ -alumina, and mixtures thereof (column 8, lines 34-47), **in claim 20**.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiara (US '216 B1) as applied to claim 14 above, and further in view of Streinz (US 6,015,506).

Taira differs in failing to teach wherein the alumina sol in Compounds (C) that has a specific surface area of from 30 to 300 m²/g and average particle size of 0.01 to 5 μm.

Streinz teaches metal oxide abrasive may be selected from the group including alumina, may be produced by any technique known to those skilled in the art and can be derived from processes including sol-gel processes and fuming processes and by any combination of these processes (column 4, lines 40-65). Streinz further teaches, fumed abrasive such as fumed alumina, comprises high temperature crystalline phases of alumina consisting of gamma, theta, delta, and alpha alumina (column 5, lines 42-50) and has a surface area ranging from 5m²/g to about 430m²/g and a particle size distribution of less than 1.0 microns and a mean particle diameter less than about 0.4 microns (column 2, lines 53-59), which encompasses applicants' alumina and intermediate alumina in Compounds (C) that have a specific surface area of from 30 to 300 m²/g and average particle size of 0.01 to 5 μm, **in claim 15**.

It would have been obvious to one having ordinary skill in the art at the time of the claimed invention to modify Tiara's polishing composition by employing Streinz' abrasive for the purpose of polishing rigid disk with an essentially defect free surface (Streinz, column 2, lines 28-34).

Response to Arguments

8. Applicant's arguments with respect to claims 13-26 have been considered but are moot in view of the new ground(s) of rejection because independent claims 13, 14, and

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17 were amended to recite, "wherein said abrasive is α -alumina and the amount of the intermediate alumina is from 1 to 100 parts by weight based on 100 parts by weight of α -alumina, which were not previously cited in the claims and not rejected by the former prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynette T. Umez-Eronini whose telephone number is 571-272-1470. The examiner is normally unavailable on the First Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ltue

March 30, 2005

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER

